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RESEARCH ARTICLE

# THE HOLIDAY EFFECT IN AFRICAN STOCK MARKETS

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**ABSTRACT**

This researchinvestigates the holiday effects in the African stock market and found strong evidence of pre-holiday effect in one of the most representative market indices. We findsignificantly higher returns on the trading day before a public holiday, relative to regular trading days. Furthermore, this effect is weakened, both statistically and economically, after the inception of financial crisis. It may signal improvement in the market efficiency in Africa.



## INTRODUCTION

The holiday effect is one of the more significant anomaliesagainst the Efficient Market Hypotheses (EMH) (Fama, 1970), which states that the pricesshould fully reflect all available information and no factor should have significant power in predicting future stock returns. However, holiday effect describes a tendency for a stock market to show abnormal risk-adjusted average returns on the final trading days before and after an exchange-mandated holidays such as New Year andLabor Day. This effect is associated with the significant difference between the stock returns of the day that precedes or follows the public holidays, and the rest of the trading days. Therefore, this anomaly can be beneficial for traders, who may change their positions on a security in the days leading up to the last trading day, or immediately after a holiday.Many previous studies suggest that the holiday effect can be explained by the fact that holidays affect a human trader's mood and attitude. Hirshleifer and Shumway (2003) studied investors' mood and found positive abnormal returns associated with sunny days or days typically associated with good moods. Yuan, Zheng, and Zhu (2006) showed that there is a decrease in return on a seven day window around a full moon which would supposedly affect investor's mood. Mehran, Meisami, and Busenbark (2012) also found a significantly positive relationship between joyful Jewish holidays and stock market returns. The holiday effects havetwo forms:

- the pre-holiday effect, shown byabnormal daily returns before the public holidays
- the post-holiday effect, shown by abnormal daily returns after the public holidays

The holiday effects were identified in many researches based on evidence from different countries. Lakonishok and Smidt (1988) and Ariel (1990) found significantly higher returns from the pre-holiday trading days. Fabozzi, Ma, and Briley (1994) found consistent higher post-holiday and pre-holiday returns in the U.S. stock market. Significant holiday effects have also been found outside the U.S. The existence of holiday effects in other developed countries, such as Japan, United Kingdom, Singapore, and Spain are documented in research studies by Kim and Park (1994), Tan and Wong (1996), Arsad and Coutts (1997), Menue and Pardo (2004), and Lucey (2005).

However, the significance and magnitude of holiday effects vary across different countries. Cadsby and Ratner (1992) found significant holiday effects in only five of ten industrialized countries. Hansen, Lunde, and Nason (2005) found significant abnormal post-holiday returns in only one out of ten countries in their research.

For investors intending to exploit the festivity anomaly in the stock price evolution, it is crucial to analyze its persistence in time. Many anomalies disappeared after their publications. For instance, Dimson and Marsh (1999) showed that the publication of an anomaly could cause its disappearance or reversal. Several studies, including Wong, et al (2006), Marquering, et al (2006),

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and Chong, et al (2005) also found changes in the holiday effects over time for many stock exchanges.

The search for holiday anomaly in Africa,a fast emerging market, should provide important information on the efficiency in its financial markets. This information may help stock traders and regulatory authorities in improving the microstructure of security trading and stock market performance.To our best knowledge, our study is the first in testing the holiday effect in the African stock markets during the financial crisis.

In this paper, the prime focus is to investigate the presence of holiday effects in the African Stock Markets. Our data sample, including 16 years ranging from 2003to 2019, enables us to investigate the holiday effects before and during the crisis started in 2008. We intend to answer two questions in this paper:

*Q1. Is holiday effect significant in the African stock market?*
*Q2. How would the financial crisis affect the holiday effect in the African stock market?*

The remainder of the paper is organized as follows: Section II describes the data sample and methods. Section III presents and discusses the empirical results. We summarize our findings in the last section.

***Data and Methodology***

Our study includes twovery representative African stock index ETFs, as shown in the Table I. All data are collected from Yahoo!Finance's database. The sample periods range from 2003 to 2019.

**Table I** Index ETF Descriptions

Data Source: Yahoo! Finance

| ETF | Tracking Index | Inception Date in Our Sample |
|---|---|---|
| VanEck Vectors Africa Index ETF (AFK) | MVIS GDP Africa Index : defines country weightings based on a country's gross domestic product (GDP). | Jul. 14th 2008 |
| iShares MSCI South Africa ETF (EZA) | MSCI South Africa 25/50 Index : large and mid-cap equity | Feb. 7th 2003 |

Daily market return of the major stock market indices have been computed and categorized based the occurrence of global financial crisis. The global financial crisis splits the full sample into two groups by Sept. 15th 2008, when the bankruptcy of Lehman Brothers was announced.

We calculate the returns of the indices using the formula:

$R_t = Ln(P_t) - Ln(P_{t-1})$

where

- Rt is the return on the day t;
- Pt is the closing market index price on the day t.

We test pre- and post-holiday effects by forming the regression model with dummy variables:
$R_t = \alpha + \beta_1 Pre\_Holiday + \beta_2 Post\_Holiday$
where

- Pre_Holiday is a dummy variable which equals one for the last trading day before a public holiday and zero otherwise;
- Post_Holiday is a dummy variable which equals one for the first trading day after a public holiday and zero otherwise.

***Empirical Results***

Table IIshows the full sample regression results on the entire sample. We found the pre-holiday effect is very significant (at 5% level)with AFK, which tracks the MVISGDP African Index. The positive pre-holiday effect is consistent with many previous studies in this field. However, the post-holiday effect is not significant. At the meantime, the EZA, which focus on stocks in the South Africa, doesn't show any holiday anomaly.

**Table II** Regression Results

We report the correlation coefficients with significance level (** denotes significance at the 5% level, * denotes 10% level), t-test results (in parentheses), and p-values (in square brackets) for each index. Only significant p-values are reported.

| Index | Return | Coefficient [p-value] |
|---|---|---|
| AFK | Pre-Holiday | .0029[.049]** |
| | Post-Holiday | -.0003 |
| | **After Financial Crisis** | |
| | Pre-Holiday | .0027[.066]* |
| | Post-Holiday | .0000 |
| EZA | Pre-Holiday | .0016 |
| | Post-Holiday | -.0028 |
| | **After Financial Crisis** | |
| | Pre-Holiday | .0008 |
| | Post-Holiday | -.0037 |

We then divide our sample into two groups by Sept. 15th 2008, when the bankruptcy of Lehman Brothers was announced, the date commonly used as the inception of financial crisis. The regression results for the after-financial crisis groupshowa weakening pre-holiday effect from the AFK. It may signal improved efficiency in the African stock markets after the financial crisis. The holiday effect remain insignificant for the South Africa's stock market.

## CONCLUSION

In this research, we investigated the holiday effects in the African stock market and found strong evidence of pre-holiday effect in the most representative market index. Our results showsignificantly higher returns on the trading day beforea public holiday, relative to regular trading days. Furthermore, we found this effect is weakened, both statistically and economically, after the inception of financial crisis. This weakened holiday effect may signal improvement in the market efficiency in Africa.

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